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Mobile Application For Doctor Appointment Scheduling

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Abstract:

Medical appointments and consultations are needed in order for a doctor to access, evaluate, study, and diagnose a patient with such a disease or illness. Several studies have been completed in this region, with some enabling a patient to schedule an appointment with a specialist doctor and the main stream of these study only interacting with the appointment. That prompted the researcher to investigate real-time patient choice, in which a patient simply selects a date and time, and the system assigns a doctor who is accessible at the moment and date, as well as handling patient setting a date with physicians. In addition, the device includes a live video appointment with a doctor. Additionally, portable wide range of application used in a few fields to cut down on time handling in capacities and incorporating a few fields. The combination of clinical fields and portable applications is studied and presented in this paper. Furthermore, the effectiveness and influence of flexible applications in the testing and examination of human services frameworks are depicted. This paper illustrates use of such Android devices in the development of mobile apps.

Keywords: Doctor Appointment System, Mobile Application System, Mobile Appointment booking, Time Management, Doctor Access, Database Management,Appointment,Scheduling,Rescheduling, Pateient details, Traditional Manual System Automation.

1.INTRODUCTION

In today's fastpaced world, managing healthcare appointments efficiently can be a challenge for both patients and healthcare providers. The proposed mobile application aim so bridge this gap by offering a seamless and userfriendly platform for scheduling doctor appointments.This applications empowers patients to easily book, reschedule,or cancel appointment at their convenience. By providing realtim e availability of doctors, the app ensures that patients can find and schedule appointments with specialists best suited to their needs .It also supports online consultations through video calls or chat,enhancing accessibility to healthcare services. Additionally , features such as appointments reminders, e-prescription,and secure access to medical records contributes to a comprehensive healthcare experience. This innovative solution seeks to improve patient satisfaction,reduce no show rates and optimize the overall appointment management process in the healthcare sector. Traditional methods of scheduling doctor appointments, such as phone calls and in-person visits, can be time-consuming and inconvenient. Patients often experience long wait times, difficulty in getting appointments with their preferred doctors, and lack of access to their medical history.Improve patient engagement and satisfaction Enhance the efficiency of doctor appointment scheduling Provide patients with easy access to their medical history and appointment schedulesReduce no-show rates and improve healthcare outcomes. Because of the world's growing and maturing population, medical services are a critical social need today. Propelling innovation has contributed significantly of growth and enhancements to this section, as well as still a lot of room in order to advance to provide better services social insurance, experts must have access to both specialists and patients. Android is one of the most well-known and widely used patient parameters. Such access while moving is beneficial to the working framework for mobile phones, including its dominance is only growing. Because it is fully accessible and customized applications for clients can be easily created and distributed. We attempt to use Android's features to put to the specialist the office of having too quiet information anywhere and at any time. Customer Information Viewer, the suggested requirements, is an Application for Android that allows the expert to view forward-thinking data of the patient's critical wellbeing parameters, for example, pulse, pulse, and soon. The expert should take notes on a patient and also observe them. The specialist should view the patient's ECG footage. The expert receives a warning every time a patient is in grave danger, that is, sometimes when any of the patient's critical conditions parameters surpass a critical breaking point. The emergency clinic server collects and sends this information to the specialist's Android device.

2. LITERATURE SURVEY

The paper titled "A Mobile Based Medical Appointment and Consultation (MMAC) System" by Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria, Health Centre Unit (2019) [1], the researcher developed a real-time appointment scheduling system that allows patients to book appointments with available doctors and also enables live consultations between patients and doctors online

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. • The paper titled “Doctor Appointment Online Booking System” by Ms. Sanjeevani, P. Avhale, Ms. Wrushali, R. Ajabe, Ms. Pallavi, Prof. N.K.Bhil (2018) [2], The proposed project is a web-based smart appointment booking system that allows users to easily book doctor's appointments online.

• The paper titled “Android “HEALTH-DR.” Application for Synchronous Information Sharing” by Amitkumar Manekar (2014) [3], "Health-DR." application is an innovative idea for ambulatory appliances, aimed at providing a healthy environment for patients and offering authentication services for users

. • The paper titled “Innovation in practice: Mobile phone technology in patient care” by Holly Blake (2008) [4], presents the study on the potential of mobile phone applications in health promotion and patient care, including the communication of health messages, monitoring of patient health data, and facilitating population interventions and chronic disease management.

• The paper titled “Development of a Mobile Application for Interaction between Patients and Doctors in Rural Populations” by Malik Bader Alazzam, Fawaz Alassery (2021) [5], presents the study on the Running Lean process, specifically through a mobile application, addresses the issue of insufficient access to specialized medical care for rural populations by connecting them with specialist doctors via the internet.

• The paper titled “Android Application for Doctors Appointment” by Prof. S. B. Choudhari, Chaitanya Kusurkar, Rucha Sonje, Parag Mahajan, Joanna Vaz (2014) [6], this system aims to simplify the appointment process for both patients and doctors, allowing patients to book appointments conveniently and doctors to manage their schedules more efficiently.

• The paper titled “Application of Smart Technologies for Mobile Patient Appointment System” by Yeo Symey, Suresh Sankaranarayanan, Siti Nurafifah binti Sait (2013) [7], presents the current challenges in patient registration and appointment scheduling in healthcare settings, highlighting the time-consuming and inefficient nature of the process.

• The paper titled “Mr. Doc: A Doctor Appointment Application System” by Shafaq Malik, Nargis Bibi, Sehrish Khan, Razia Sultana, Sadaf Abdul Rauf (2017) [8], the proposed online appointment system has been implemented using Android Studio for application development and HTML and PHP for the website.

• The paper titled “Mr. Doc: A Doctor Appointment Application System” by Shafaq Malik, Nargis Bibi, Sehrish Khan, Razia Sultana, Sadaf Abdul Rauf (2017)[9], the proposed online appointment system has been implemented using Android Studio for application development and HTML and PHP for the website.

• The paper titled “Prototype of Beacon-Mobile Application for Medical Appointment Scheduling Management” by Harold Ernesto Caceres Zea, Bch, Shirley Romero Solano, Est, Milagros Motta Rondon, Est, Karim Guevara Puente de la Vega, Dra, Eveling Castro Gutierrez, M.Sc., Cesar Baluarte Araya, Dr (2019) [10], the health beacon app utilizes Bluetooth Low Energy technology.

• The paper titled “Design and Implementation of a Patient Appointment and Scheduling System” by Akinode, John Lekan, Oloruntoba S.A (2017) [11], the proposed online appointment system has been implemented using Android Studio for application development and HTML and PHP for the website.

• The paper titled “Developing an online patient appointment scheduling system based on web services architecture” by Xiaojun Zhang, Dr. Ping Yu, Dr. Jun Yan, Hongxiang Hu, and Dr. Niraj Goureia (2012) [12], the Web Services architecture is suitable for developing an integrated health information system in a heterogeneous healthcare environment, and the prototype system demonstrates its feasibility.

• The paper titled “Online Appointment Management System “by Alaa Qaffas1, Trevor Barker (2012) [13], the development of an online appointment management system was deemed necessary to modernize and improve the registration and scheduling process in schools.

• The paper titled “Development of a Mobile Application for Patient's Medical Record and History” by Md. Talat Mahmud, Faria Soroni, Mohammad Monirujjaman Khan (2021) [14], The Health Passport project aims to establish a connection between patients and doctors by providing a free digital platform that allows patients to actively participate in their own treatment process.

• The paper titled “Enhancing Patient Appointments Scheduling that Uses Mobile Technology” by Godphrey G. Kyambille, Khamisi Kalegele (2016) [15], an integrated mobile appointment scheduling system can enhance the efficiency of appointment scheduling in hospitals, simplifying the tasks of both patients and doctors.

• The paper titled “Medical appointment application” by Noorsyahira Ismail, Shahreen Kasim, Yusmadi Yah Jusoh, Rohayanti Hassan, Ayu Alyani (2017) [16], the application has advantages such as allowing patients to easily book appointments and avoid long queues.

• The paper titled “Design and Implementation of “Novus”- A Doctor Appointment System” by Amar Chippawar, Shubham Kolhe, Kajal Raipure, Rushikesh Khursade, Dr. V. G. Nasre (2021) [17], this application provides a solution for managing and booking appointments, allowing users to select doctors based on their details and reviews.

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• The paper titled “A web-based appointment system to reduce waiting for outpatients: A retrospective study” by Wenjun Cao, Yi Wan, Haibo Tu3, Fujun Shang, Danhong Liu, Zhijun Tan, Caihong Sun, Qing Ye and Yongyong Xu (2014) [18], implementing a web-based registration system can improve patient satisfaction and reduce waiting times. However, the main barrier to its use was a lack of information about online appointments.

• The paper titled “SMS DISTRIBUTER BASED PATIENT APPOINTMENTS SYSTEM” by Mohammad Salim Abdulrahman (2017) [19], the use of a proposed appointment management system, specifically an SMS distributor-based system

3. PROPOSED METHODOLOGY

Planning: Understanding and analysing user specific needs and requirements to identify existing Doctor Mobile Applications. • Informative Survey: Understand the needs and preferences of doctors. Conduct surveys or interviews to gather insights. Select the appropriate technologies, platforms, and frameworks for app development based on project's requirements. • Design: Select the appropriate technologies, platforms, and frameworks for app development based on project's requirements. • Development: Implementation of features like user authentication, secure data storage. Implementation of strong encryption for data. Secure authentication and authorization mechanisms. Connect the app to relevant payment gateways. • Deployment: Once the development is completed, it is ready to be deployed. Thoroughly test the application for functionality, security, and performance. Consider both manual and automated testing. Collect feedback from doctors and users, and make necessary improvements to the application • Monitoring and Maintenance: Continuously monitor the app for issues, update it to fix bugs, and keep it in compliance with changing regulations. Provide training and support for doctors to effectively use the application.

Phase 1: Requirements Gathering

1. Conduct stakeholder interviews: Interview doctors, patients, and administrative staff to gather requirements and understand their needs and pain points.

2. Survey patients and doctors: Conduct surveys to gather more information about their preferences and expectations from the app.

3. Analyze existing solutions: Research existing doctor appointment scheduling apps to identify best practices and areas for improvement.

4. Define functional and non-functional requirements: Document the requirements gathered from stakeholders, surveys, and research.

Phase 2: Design

1. Create wireframes and prototypes: Design low-fidelity wireframes and high-fidelity prototypes to visualize the app's layout, navigation, and key features.

2. Develop a visual design concept: Create a visual design concept that aligns with the app's purpose and target audience.

3. Design key screens and features: Design key screens, such as the login screen, appointment scheduling screen, and doctor profile screen.

Phase 3: Development

1. Choose a development framework: Select a suitable development framework, such as React Native or Flutter, to build the app.

2. Develop the app's backend: Develop the app's backend using a server-side programming language, such as Node.js or Python.

3. Integrate payment gateways and APIs: Integrate payment gateways and APIs, such as Google Maps or calendar APIs.

4. Conduct unit testing and integration testing: Conduct unit testing and integration testing to ensure the app's stability and functionality.

Phase 4: Testing and Quality Assurance

1. Conduct alpha and beta testing: Conduct alpha and beta testing with a small group of users to gather feedback and identify bugs.

2. Conduct usability testing: Conduct usability testing to ensure the app is user-friendly and meets the required standards.

3. Perform security testing: Perform security testing to identify vulnerabilities and ensure the app's security.

Phase 5: Deployment and Maintenance

1. Deploy the app to app stores: Deploy the app to app stores, such as Apple App Store or Google Play Store.

2. Monitor app performance and fix bugs: Monitor app performance, fix bugs, and update the app regularly to ensure its stability and security.

3. Gather user feedback and iterate: Gather user feedback and iterate on the app's design and functionality to improve user satisfaction.

Advantages:

1. Convenience: Patients can book appointments from anywhere, at any time, using their mobile devices.

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2. Time-saving: Patients can save time by booking appointments online, rather than calling or visiting the doctor's office.

3. Easy access to medical history: Patients can access their medical history, appointment schedules, and test results through the app.

4. Reminders and notifications: Patients receive reminders and notifications about upcoming appointments, test results, and medication schedules.

5. Reduced wait times: Patients can reduce wait times by checking-in online and completing paperwork before their appointment.

6. Improved patient engagement: Patients can take a more active role in their healthcare through the app, improving health outcomes.

7. Increased efficiency: Doctors and administrative staff can manage schedules and patient data more efficiently, reducing errors and improving patient care.

8. Cost-effective: Mobile apps can reduce costs associated with paper-based scheduling and patient communication.

Applications:

1. Doctor appointment scheduling: Patients can book appointments with doctors, specialists, and other healthcare professionals.

2. Medical history management: Patients can access and manage their medical history, including test results, diagnoses, and medications.

3. Reminders and notifications: Patients receive reminders and notifications about upcoming appointments, test results, and medication schedules.

4. Telemedicine: Patients can consult with doctors remotely through video conferencing, reducing the need for in-person visits.

5. Patient engagement: Patients can take a more active role in their healthcare through the app, improving health outcomes.

6. Medical billing and insurance: Patients can manage their medical bills and insurance claims through the app, reducing paperwork and administrative tasks.

7. Health and wellness tracking: Patients can track their health and wellness metrics, such as blood pressure, weight, and exercise, through the app.

8. Integrations with wearable devices: Patients can integrate their wearable devices, such as fitness trackers and smartwatches, with the app to track their health and wellness metrics.

Industries:

1. Healthcare: Hospitals, clinics, medical groups, and individual healthcare providers can use the app to manage patient scheduling and communication.

2. Medical research: Researchers can use the app to collect data and track patient outcomes in clinical trials.

3. Health insurance: Health insurance companies can use the app to manage claims and communicate with patients.

4. Pharmaceuticals: Pharmaceutical companies can use the app to manage patient engagement and track medication adherence.

Features:

1. User registration and login: Patients can register and log in to the app to access their account and schedule appointments.

2. Appointment scheduling: Patients can schedule appointments with doctors and other healthcare professionals.

3. Reminders and notifications: Patients receive reminders and notifications about upcoming appointments, test results, and medication schedules.

4. Medical history management: Patients can access and manage their medical history, including test results, diagnoses, and medications.

5. Telemedicine: Patients can consult with doctors remotely through video conferencing.

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4. EXPERIMENTAL ANALYSIS

This page is for a patient to login where it having a username and password for a user to book an appointment…

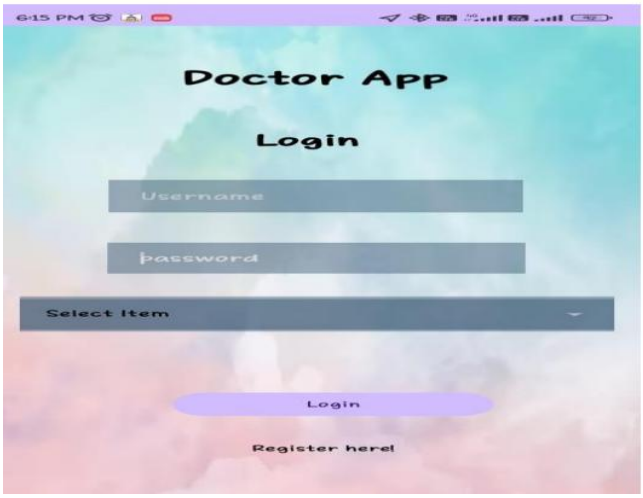

Fig :1 login page

This ia a doctor appointment page,Where it appointment completes inthis page after.A user login with username and passwordWhere here after entering a patient name then we can see the patients full details.. as they name,what the issue they are facing what is the previous prescription. etcw

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Fig 2: Appointment complete page.

Another login page is rescheduling appointment page..Where it is a login page used for a patient who is a already a holder in an hospital.Where it has previous data of patient so that in this page it asks for the same data or a newdata…

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Fig 3: Reschedule Appointment page

It is a register page for newuser for patients .If we are a newuser for scheduling or taking appointment through mobile application so that it asks for username emailed password and confirm password

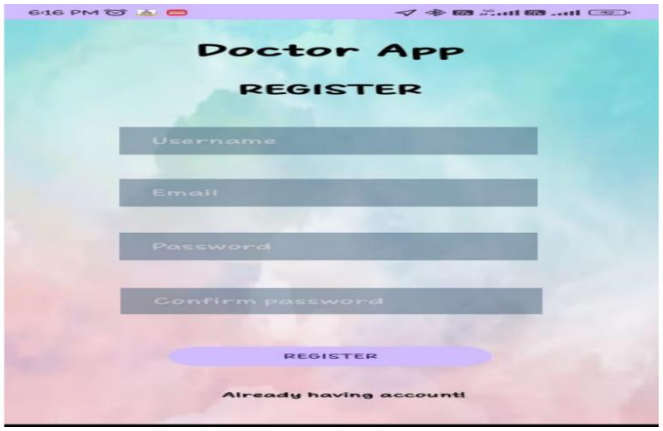

Fig 4: Register page

5. CONCLUSION

After completing the project on doctor appointment system using mobile app, it can be concluded that this technology has the potential to significantly improve the healthcare industry. The use of mobile apps for doctor appointments not only increases © 2024 JETIR January 2024, Volume 11, Issue 1 www.jetir.org (ISSN-2349-5162) JETIR2401287 Journal of Emerging Technologies and Innovative Research (JETIR) www.jetir.org c803 convenience for doctors, but also streamlines the entire appointment process for patients and healthcare facilities. Through the development and implementation of this system, various benefits have been identified. One of the main advantages of this system is the reduction of wait times for patients. With the use of mobile apps, doctors can easily schedule appointments at their preferred time. This eliminates the need for patients to physically wait in long queues, saving them time and reducing frustration. Additionally, the system allows for better management of the doctor's schedule, allowing for more efficient use of their time and reducing the risk of overbooking. Furthermore, the use of mobile apps for doctor appointments promotes accessibility for patients. This is especially beneficial for patients with mobility issues or those living in remote areas. The system also allows for the integration of online consultations, providing a convenient option for patients who may not be able to physically visit the doctor's office. In addition to convenience and accessibility, the doctor appointment system using mobile app also promotes efficiency in the healthcare industry. By automating the appointment process, there is less room for human error and miscommunication. This leads to a more efficient and accurate scheduling process, ultimately improving the overall quality of healthcare services. Moreover, the system also has the potential to reduce healthcare costs. With the use of mobile apps, doctors can easily reschedule or cancel appointments, reducing the number of no-shows and allowing doctors to fill the vacant slots with other patients. This can lead to a decrease in lost revenue for healthcare facilities and ultimately result in more affordable healthcare services for patients. In conclusion, the development of doctor applications has transformed the healthcare industry, offering a multitude of benefits to both healthcare professionals and patients. These applications have the potential to significantly improve patient care, streamline medical workflows, and enhance accessibility to healthcare services. By providing efficient tools for communication, patient data management, and even remote monitoring, doctor applications can lead to better healthcare outcomes and increased patient satisfaction. However, the development of doctor applications also comes with

challenges, including the need to ensure robust data security and compliance with healthcare regulations. Overcoming these challenges is crucial to maintain patient trust and meet legal

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